

# AMERICAN Railroad Journal.

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## Railroad Sanitation.

(Continued from last week.)

(Read at the Savannah meeting of the American Public Health Association, 1881.) By S. S. HERRICK, M. D., Secretary of the Louisiana State Board of Health.

3. If it be admitted that the personal hygiene of railroad employes is a matter of any importance to the company, it follows that the advice of a sanitarian would be valuable in relation to passenger cars, to buildings and grounds, and in the selection of sites and the creation of works and buildings. It is not supposed that practical railroad managers regard disease as a special dispensation of providence, when they build without due regard to drainage, removal of excreta or proximity to marshes. These and other similar blunders simply indicate neglect to secure suitable sanitary advice, and not a spirit of fatalism; but the same managers are careful to have the services of competent mechanical engineers and builders. The time is happily past when sanitation can be stigmatized as a profane scheme to cheat divine providence; let us hope that managers of corporations may soon cease to count it a fruitless tax on their revenues. "Public health is public wealth" has some time been repeated for an axiom, and corporations aim at securing a share of the public wealth; can they therefore either justly or safely disregard the public health?

4. For some years the national government has sustained a meteorological service, for the benefit of the agricultural and commercial interests. These are the very interests which support railroads, and it is plainly an advantage to the companies to co-operate with and extend this service, both to enable them to guard their own property from damage by storms and for the benefit of the agriculturists who give them business. The cost would be trivial, for the observations could be made and forwarded by telegraph operators, and it is not improbable that the necessary instruments would be furnished by the government. The affiliation of this branch of railroad sanitation with the National Signal Service would be so manifestly advantageous to all concerned, that it could not fail of adoption.

5. Railroad companies are constantly liable to receive persons and animals affected with contagious diseases for transportation in their cars, and no one would assert that it is proper to admit them. It is too much to expect that the ordinary officers of a company could be de-

pended on to recognize and ward off all danger of this kind. Some advantage might be derived from printed rules, prepared by a medical man, but instances would arise calling for a medical diagnosis; and then a physician's certificate should be obtained to settle the doubts of the station-agent or train-conductor before admitting a suspected person on the train. As animals are generally shipped only at a few important stations, it would be easy to have the herds inspected by an expert beforehand.\*

It is beyond question that many animals are destroyed, and still more injured, during transportation by overcrowding and by confinement too long without food and water. Strict rules should be framed to govern this kind of traffic, and nothing short of special supervision can secure their enforcement. Safety requires that this supervision should be exercised from a sanitary standpoint, and so constantly that its influence may never be wanting.

6. The experience of the yellow fever epidemic of 1878 taught the managers of railroads running out of New Orleans particularly the usefulness of medical officers in their service during actual or threatened pestilence. The judicious efforts of sanitarians in 1879 prevented a general resort to the shot-gun quarantines which characterized the year 1878. Had there been a sanitary organization in 1878 upon the railroads, it is certain that they would have been spared much pecuniary loss, and the people along their lines much needless alarm and deprivation of the comforts of life.

In the presence of danger from pestilence, people look to their physicians. The medical adviser of a railroad company can come to a rational and probably satisfactory understanding with his professional brethren; and, if the people are distrustful, he can bring other medical men to meet them whom they will trust.

Occasions arise when legislation, or discussion of questions in medical or other bodies, might effect the sanitary and material interests of railroads, and when their accredited medical representatives might be of great benefit. Their value would be most appreciated in their absence, as with life preservers in shipwreck.

But whatever advantages may be claimed for

\* Since the above was written, a Kentucky stock-dealer has informed me that he suffered a loss of more than \$8,000 a few years ago from glandered horses and mules, which he is satisfied were infected in railroad cars. This he was constrained to bear without recourse to the transportation companies, from difficulty of establishing proof and aversion to litigation.

railroad sanitation, either to the public or to the companies, the question of its adoption by any management will turn upon its probable financial success. It seems to be generally agreed that any system of relief maintained by a railroad company is better than to let the victims of accidents shift for themselves and look for reimbursement from the courts. To put the service directly under the general management would be like leaving the workshops or the operation of the road without separate supervision. The superintendence is an expense, but it is not presumed that men are best judges of what they are to do at a particular time, though they may know how to do it.

As to physical defects, there can be but little doubt that it will cost a company more to find them out by a series of accidents, than to pay an expert to discover them before the men are trusted with lives and property.

In fact, every feature of this service is designed to secure the company against pecuniary loss: 1, by reducing the cost of actual disasters to the lowest amount; 2, by adopting precautions to obviate disasters; 3, by preserving the health and securing the efficiency of employes; 4, by avoiding the stigma of "common carriers" of contagion and destroyers of live stock, with its incidental losses; 5, by obviating interruption of business through quarantine obstructions and expensive lawsuits for damages to person and property. It has therefore the essential nature of insurance, with the substitution of the element of prevention for that of reimbursement. What a gain would it be to fire and marine insurance if this substitution could be achieved by any system capable of formulation.

A few remarks upon the personnel of a railroad sanitary service might here be appropriate. Suppose 1,000 miles of single track road to be under the same general management, one medical man should be capable of exercising sanitary superintendence of the whole. But it is to be understood that he must renounce private practice and every other occupation except this duty. Then there should be a district surgeon at every point where the crews of trains shift. The work shops would naturally fall into this arrangement. District surgeons would attend the hospitals and be sent for in case of accidents within their own or adjoining districts. These surgeons might attend to private practice. Their compensation from the company would be according to a settled tariff for surgical cases. Hospital service and the

medical attendance of employees and their families might be at a fixed salary.

Examinations for physical condition of employees would be made and carefully recorded by the chief surgeon, and he would also be the inspector of hospitals and all wounded persons. At every point where cattle in large numbers are shipped, there must be an inspector of stock (a physician or veterinarian), to see that no diseased animals are admitted and the rules enforced relative to overcrowding, etc.

In addition to the above, it might be expedient to make arrangements with local physicians at all important stations along the lines to render service, in case of accidents, at fixed rates of compensation.

I cannot doubt that such a sanitary organization would conduce to the common benefit of companies and employees: to the later, by contributing to their health and comfort; to the former, by diminishing interruptions and derangements in their operations; while their mutual relations would become more harmonious and friendly, and danger of strikes and riots correspondingly diminished. In like manner its influence would be salutary, as affecting the relations of the company with the public. Notwithstanding the proverbial recklessness of the average American traveler touching his personal safety, there is a large fraction who value security from preventable accidents and diseases, and would manifest preference for a management where this consideration is recognized. They are the most intelligent and influential portion of the public and the best patrons of transportation companies.

In the rivalry of numerous and competing routes, managers are wont to boast of the advantages which they offer in respect to economy, speed, comfort, and even safety. Liberal expenditures are made to promote speed and comfort, in the confident expectation that they will be returned in augmented business receipts. It is certain that much might be done for promoting safety in the manner herein indicated, and that the public might be invited to appreciate the offer through the usual advertising mediums. There is good reason to presume that many would be sensible to such an inducement and give preference to the safer pathway. Thus the premium on the insurance would be returned, and the saving of life and property would be clear gain.

THE END.

#### Union Pacific Railway.

THE Secretary of the Interior has transmitted to Congress the report of the Government Directors of the Union Pacific Railway Company for 1881. The Directors claim that enormous benefits have resulted in the West from the completion of this railroad in developing latent resources. The report contains a detailed statement of the progress made in the construction of branch lines and of changes in the main road itself calculated to increase its efficiency. There were 75,692 acres of land sold for the nine months ending November 30, 1879, at an average of \$4.93 per acre. The local earnings of the company are said to be now 90 per cent of the surplus earnings, while at the beginning of its operations the through

freight represented 70 per cent of the earnings. The Directors have not considered it necessary to go into the financial operations of the company, as these matters are embraced in the report to the Auditor of Railroad Accounts, which has been published. Speaking of the general condition of the road, the Directors say the track from Council Bluffs to Ogden could scarcely be in better condition. There is no smoother running road in the country. It is well ballasted with good cross-ties at suitable distances apart, and all but about 50 miles has been laid with steel rails. Every effort is made to keep the road in complete repair. Between Council Bluffs, Iowa, and Ogden, Utah, there were laid during 1881, up to September 1, 17,559.54 tons of steel rails, which would be equivalent to about 192 miles of steel track laid during the season. Several hundred feet of pile bridges have been filed with embankment, and the road has been raised and widened in many places. The maximum grade was originally 79.2 feet per mile. It has been a constant source of annoyance to the company, often requiring the division of freight trains to pass the steep grades. It has been reduced to 21 feet per mile, and 50 cars will be as easily hauled as 18 were before the change. It required a large outlay, not only to remove the earth, but to build the embankment necessary to overcome this grade. The unprecedented freshets in the Spring of 1881, and the long continued high water, worked serious damage to a considerable portion of the road in the Platte Valley, East of Columbus. All these damages have been repaired, and the road-bed has been raised at exposed places to high-water mark, all along the line through the Platte Valley from Elkhorn to Columbus. The Directors comment upon the great tide of immigration now flowing to the West, and say it is likely to increase for years to come. In conclusion the report says that there can no longer be a doubt as to the ability of the Union Pacific Railway Company to pay back every dollar it has received from the Government for construction purposes.

#### Heat in Silver Mines.

If there are to be found anywhere in the world a set of human salamanders we may claim the credit of having them here on the Comstock. What would scorch a man who lives wholly on the surface chills a miner inured to the heat of the lower levels. A miner who has been for some months past working in one of the hottest sections of the Comstock, a day or two since gave an *Enterprise* reporter his experience of the heat which miners are often called upon to encounter. He says that in working at points where the thermometer marks a temperature of 115 to 120 degrees great thirst is experienced. No ice-water is too cold to be swallowed with a relish. Men go to the water-barrel, in which huge chunks of ice are floating about, and will take their picks and chop up the ice in order that the water may be rendered colder by being filled with fine fragments. Often this does not satisfy them, and they chew and swallow lumps of ice. The natural temperature of the human body is about 98 degrees Fahrenheit. Therefore when

a man remains in a hot place for an hour, or even half an hour, his blood and his whole body become heated to a temperature of 115, 120 degrees, or whatever may be the temperature of the place in which he is at work. It is then that the miner begins to pour down ice-water and eat ice. The strangest thing about the business is that it does not hurt any of the men. Often they swallow such quantities of ice-water that their stomachs will not retain it, and in vomiting it up it will feel cold in their mouths and against their teeth. All they do on such occasions is to swallow more of the same water, but more cautiously.—*Virginia (Nev.) Enterprise*.

#### Imports of Dry Goods at New York.

The Imports of Foreign Dry Goods at New York for the month of January, were:

ENTERED FOR CONSUMPTION.			
	1880.	1881.	1882.
Manufa. of wool....	\$1,516,412	\$1,311,541	\$1,868,998
Manufa. of cotton....	2,346,615	2,498,788	2,776,625
Manufa. of silk....	2,374,558	2,032,814	2,922,136
Manufa. of flax....	1,710,446	964,717	1,037,023
Miscell. dry goods....	660,038	607,390	767,153
Total ent. for consumption.....	\$8,608,069	\$7,415,250	\$9,641,835
WITHDRAWN FROM WAREHOUSE.			
	1880.	1881.	1882.
Manufa. of wool....	\$498,983	\$605,492	\$544,319
Manufa. of cotton....	461,746	930,999	658,110
Manufa. of silk....	407,144	589,233	518,863
Manufa. of flax....	490,664	684,183	468,536
Miscell. dry goods....	154,064	194,572	197,925
Total withdr'n from warehouse.....	\$2,012,601	\$3,085,479	\$2,387,643
Add ent. for consumption.....	8,608,069	7,415,250	9,641,835
Total thrown on the market.....	\$10,620,670	\$10,500,729	\$12,029,378

ENTERED FOR WAREHOUSING.			
	1880.	1881.	1882.
Manufa. of wool....	\$501,638	\$578,274	\$643,490
Manufa. of cotton....	418,839	735,142	752,097
Manufa. of silk....	326,741	528,088	585,035
Manufa. of flax....	658,025	619,307	481,184
Mis. dry goods....	203,579	252,425	222,799
Total ent. for warehouse.....	\$2,106,812	\$2,713,236	\$2,684,605
Add entered for consumption.....	8,608,069	7,415,250	9,641,835
Total entered at port.....	\$10,714,881	\$10,128,486	\$12,326,440

The Imports of Foreign Dry Goods at New York for seven months ending with January were:

ENTERED FOR CONSUMPTION.			
	1880.	1881.	1882.
Manufa. of wool....	\$10,388,185	\$10,121,729	\$12,229,246
Manufa. of cotton....	9,967,255	11,156,180	12,544,501
Manufa. of silk....	15,631,545	15,932,311	19,681,366
Manufa. of flax....	7,599,117	5,658,476	7,565,901
Mis. dry goods....	4,100,959	4,541,256	4,985,174
Total entered for consumption...	\$47,687,061	\$47,409,952	\$57,006,188
WITHDRAWN FROM WAREHOUSE.			
	1880.	1881.	1882.
Manufa. of wool....	\$3,808,235	\$5,888,429	\$4,785,838
Manufa. of cotton....	1,991,538	3,130,125	2,233,038
Manufa. of silk....	2,347,272	4,029,116	3,031,738
Manufa. of flax....	2,216,974	3,032,428	2,420,309
Mis. dry goods....	834,818	1,285,754	1,291,743
Total withdrawn from warehouse.....	\$11,198,837	\$17,365,852	\$13,762,666
Add entered for consumption...	47,687,061	47,409,952	57,006,188
Total thrown on the market.....	\$58,885,898	\$64,775,804	\$70,768,854

ENTERED FOR WAREHOUSING.			
	1880.	1881.	1882.
Manufa. of wool....	\$3,790,776	\$5,977,403	\$4,199,178
Manufa. of cotton....	2,026,563	3,117,705	2,246,313
Manufa. of silk....	2,457,065	4,123,580	3,262,829
Manufa. of flax....	2,746,500	3,153,893	2,392,346
Mis. dry goods....	993,842	1,834,693	1,339,347
Total entered for warehouse.....	\$12,015,346	\$18,212,272	\$13,440,016
Add entered for consumption...	47,687,061	47,409,952	57,006,188
Total ent. at port.....	\$59,702,407	\$65,622,225	\$70,446,206

The figures given above represent the net gold value of the goods as invoiced, without the addition of freight or duty.



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## LEGAL RIGHTS OF PASSENGERS.

THE recent disaster at Spuyten Duyvil sharply emphasizes several features in present systems of railroad management. The accident has occurred, the dead cannot be brought to life, the injuries received cannot be repaired with money, no adequate reparation can be made for wounded hearts. But does the law provide no remedy whatever in such cases? Must travelers injured on a railroad accept a coroner's verdict in full satisfaction for broken bones? What remedies have the relatives of the persons killed in that terrible disaster? What remedies have the survivors? What are the legal rights of passengers who have been injured in a railroad collision?

The general rule is that where an injury happens to a passenger on a railroad the person injured makes out a *prima facie* case by showing that he had a ticket, that the accident happened, and that in consequence of this accident he sustained damage. When these facts are made to appear, it is for the railroad company to excuse the *prima facie* failure of duty; to show that, notwithstanding, the accident happened in spite of the use, by the company, its servants, and the contractors by whom its road, appliances, and coaches are built, of the greatest degree of diligence practicable under the circumstances. In other words, it must show, in order to rebut this presumption, that the accident resulted from circumstances against which human care and foresight could not guard.

Carriers of passengers are bound to use extraordinary care and skill to secure the safety of their passengers. In the language of the

New York State Court of Appeals, it has been said that "every wayfarer must take the risks incident to the mode of travel he adopts; but these risks are only those which cannot be avoided by the carrier of passengers by the utmost degree of care and skill in the preparation and management of the means of conveyance." The Supreme Court of the United States expresses the doctrine more strongly when it says, "When carriers undertake to convey persons by the powerful but dangerous agency of steam, public policy and safety require that they shall be held to the greatest possible care and diligence. The personal safety of passengers should not be left to the sport of chance or negligence of careless agents. Any negligence in such cases may well deserve the epithet of 'gross.'" Railroad companies must adopt such rules and regulations for the running of their trains as will insure safety, and after adopting them they must conform to them or be responsible for injuries to passengers resulting from a departure from them.

Inasmuch as a railroad company, like other corporations, must become liable for the most part through the acts of its servants or agents, it is liable for the acts of the servants in its employment, although its servants do not follow or actually disobey its instructions, general or special. It is no answer for a railroad company to say that the negligence of a stranger concurred with the negligence of the company to the injury of a passenger. If the New York Central Railroad can prove, for instance, that the primary cause of the accident at Spuyten Duyvil was the pulling of the cord of the air brake by one of the passengers it will not relieve it from the failure of the brakeman Melius to go back, or from any other negligence on its part which contributed to the injury. Assuming the facts to be as stated by newspaper reports, the survivors of the accident have an undoubted cause of action against the railroad company.

The damages recoverable for the bodily pain and suffering of those injured are not limited to the suffering experienced before the trial of the case, but extend to such future suffering as will probably result from such injuries. At common law, where a person was killed by the negligence of a person or corporation no right of action survived; but the statute law of England, which has been followed in New York State, provides an action for damages not to exceed five thousand dollars in case of death upon a railroad, caused by the fault of the company, although such death was instantaneous. There can be no doubt whatever but that the injured survivors of the

Spuyten Duyvil disaster and the relatives of those who were killed in that accident have a complete remedy at law, although that remedy is lamentably inadequate.

We have no reason to believe that the New York Central Railroad will refuse to make all the reparation in their power to the friends of those who were injured, but we have very briefly stated the law applicable in such cases, thinking that it might be of general interest.

## TRUST COMPANIES.

A TRUST company differs, or should differ, from a National or a State bank in several particulars. In the first place a Trust Company should never be a bank of issue; that is, it should have no circulation of its own, no bills or notes on the market subject to redemption on demand. In the second place, it should never be a bank of discount. National and State banks can rightfully take the risk of discounting paper for their depositors, for as a rule they hold no funds in trust, and are organized as mediums of exchange between business men. A Trust Company, however, is not designed as any such medium, and in its capacity of a guardian cannot assume the usual business risks. In the third place a Trust Company should never for an instant engage in any speculative enterprises, either in the investment or loaning of its moneys, no matter how fair a promise such enterprises may give. The object of a Trust Company is not so much to make money as to carefully guard and return with a fair interest when called for the funds committed to its care. In addition to the above there are other things a Trust Company should not attempt, but these three that are mentioned will serve to guide the mind in that direction sufficiently for all intents and purposes. These thoughts lead us to the contemplation of what is the object and what the purposes of a Trust Company. The name implies that such a company is a corporation formed for the purpose of holding property in trust.

This is so broad and comprehensive that we have taken the pamphlet of one of our safest Boston companies, to specify these purposes in detail.

"Said corporation shall have power to receive and hold moneys or property in trust or on deposit from courts of law or equity, including courts of probate and insolvency, executors, administrators, assignees, guardians, trustees, corporations, or individuals, upon such terms or conditions as may be obtained or agreed upon."

In harmony with the foregoing powers the courts are authorized to direct, by decree or otherwise, any moneys or property under their control, to be deposited with such companies, provided said companies shall assent to execute the trust to be committed to them.

With such almost unlimited powers of receiving moneys and property, and the courts so fully authorized to use them as depositories, it follows as an act of wise legislation that the act of incorporation should regulate by law the character of investments for such a company. These investments for this Boston company are specified to be, the authorized loans of the United States, or any of the New England States; or counties, cities or towns of any of the New England States; in the first mortgage bonds of any railroad company which has earned and paid regular dividends for two years preceding such investment, or in the bonds of any such railroad company as is unencumbered by mortgage, or in the stock of such railroad companies incorporated by this State; and the said corporation may make loans upon mortgages on real estate within this commonwealth, or upon the notes of corporations created under the laws of this commonwealth, and the notes of individuals with a sufficient pledge as collateral of any of the aforesaid securities. In fact, such a company may invest in those securities which are permitted to savings banks and under like restrictions. The Commonwealth granting the act of incorporation provides for certain stated examinations by the savings bank commissioner, which, with the examinations given by the committee appointed by the directors and stockholders, do not leave much room for malfeasance in office, except through the criminal neglect of those examining.

But something more is needed than what has already been stated in order to secure absolute safety. A corporation which is authorized to act as agent for the purpose of issuing, registering, or countersigning the certificates of stock, bonds, or other evidences of indebtedness of any corporation, association, municipality, state or public authority, and to receive and make payments on account of the same, require a safeguard more absolute than is covered by the honesty of its employes and the examination by properly appointed officials. Such a corporation requires that the men owning the stock—the individual stockholders—shall severally and collectively be men of undoubted character as well as ability. The New England Trust Company of Boston meets this point with a courage that is worthy of imitation. In their By-Laws appear the following articles.

#### APPRAISAL AND SALE OF SHARES OF CAPITAL STOCK.

ARTICLE 7. Any member of this corporation who shall be desirous of selling any of his shares; the executor or administrator of any member deceased; and the grantee or assignee of any shares sold on execution, shall cause such, their shares respectively, to be appraised by the directors, which it shall be their duty to do on request, and shall thereupon offer the same to them for the use of the corporation, at such appraised value; and if said directors shall

choose to take such shares for the use of the corporation, such member, executor, administrator, or assignee shall, upon the payment or tender to him of such appraised value thereof, and the dividends due thereon, transfer and assign such share or shares to said corporation; provided, however, the said directors shall not be obliged to take such shares at the appraised value aforesaid, unless they shall think it for the interests of the company; and if they shall not, within ten days after such shares are offered to them in writing, take the same and pay such member, executor, administrator, or assignee therefor the price at which the same shall have been appraised, such member, executor, administrator, or assignee shall be at liberty to sell and dispose of the same shares to any person whatever.

ARTICLE 7. (Amended January 16, 1878.) It shall be the duty of such executor, administrator, grantee or assignee to offer said shares for appraisal and to be taken by the corporation, if it shall so elect, whenever requested by the Actuary or Secretary, and no dividends or interest shall be paid or allowed after a failure to comply with such request; provided, that such request shall not be made until after the payment of one dividend and the expiration of six months from the death of the owner, or sale as aforesaid; but the offer may be made at any earlier period if the party shall prefer.

ARTICLE 8. The directors shall have power, and it shall be their duty, to sell and dispose of the shares which may be transferred as aforesaid to the corporation, whenever, in their judgment, it can be done with safety and advantage to the corporation; and in all sales made by the directors, under any of the aforesaid provisions, it shall be their duty to sell the shares to such persons as shall appear to them, from their situation and character, most likely to promote confidence in the stability of the institution; no greater number than one hundred shares being assigned to any one person; nor in the case of a person already a member, a greater number than will be sufficient to increase his previous number to one hundred shares.

So far this company has strictly adhered to these articles, and all stock offered has been bought by the company; and the stock thus bought has been sold by the company, the directors voting on the list of applicants as to who should be elected to become a stockholder. By strictly adhering to these articles, a company originally composed of the best citizens of Boston has been enabled to always remain the same, as these men, having all the power, are careful not to associate with themselves men of doubtful character or speculative tendencies.

Now as railroad companies have great need and use for just such corporations, it well becomes the directors of these roads to pay particular attention to the question of who are the stockholders of a Trust Company before giving it power to act as its agent. That Trust Company whose stock is hawked about or sold in open market is liable sooner or later to fall into the hands of designing men who will manipulate its moneys to the detriment of all interested. The National and State banks cannot well be close corporations, but a Trust Company should never be anything else. Here is a point about which railroad companies have not been strenuous enough, and we call their attention to it, in their dealings with Trust Companies.

#### CONSTRUCTION.

HORSE-CAR lines are projected between many villages in Italy on the roads built by the old Romans.

THE track of the Guaymas Railroad in Sonora is now laid to within 20 miles of Hermosillo, and it is being extended at the rate of a mile and a half per day.

THE terminus of the Pembina Mountain branch of the Canada Pacific Railway has been definitely located on N  $\frac{1}{2}$ , sec. 30, Tp. 3, R. 8, the site of Manitoba City.

THE Northern and Union Pacific Railroad companies have arranged for a third rail on the Utah Northern, so that equal privileges can be enjoyed at Helena and Butte, Montana.

THE work of construction on the California Southern Railroad is being vigorously pushed. On the 18th ult. the track was four miles above San Ysadora, on the Santa Margarita Ranch.

THE new ferry boat Jamaica, built for the Nassau Ferry Company of New York, was launched from the Harlan & Hollingsworth yard, in Wilmington, Delaware, on the 31st ult.

It is announced in Rochester that the New York, Lake Erie and Western Railroad Company has decided to build a line from Dansville, Livingston county, to join the main line at Burns, Alleghany county.

THE contract for building a railway tunnel under the St. Lawrence river, at Montreal, has been awarded to J. B. Rouilliard, for \$3,500,000, including drainage and lighting complete, the work to be finished in 1885.

THE New Bedford Standard says that the Whitney Company have abandoned the project of constructing the Cape Cod Canal, careful estimates made on the recent surveys showing the cost to be more than a million dollars above what was expected.

THE contract for building the Pemigewasset Valley Railroad has been awarded to Patrick Kiernan, of Chelsea, Mass., who has already sublet most of the work. Operations are to begin February 8, and the road is to be finished to Woodstock by November 1.

THE superintendent of the Boston and Maine Railroad purposes to inclose the heater in every new car which he builds in a compartment of riveted boiler iron. The extra expense will be only \$100, a small sum compared with the cost of a car and the dangers thus avoided.

It is reported that the Canada Pacific Railway Company have enough material now at the end of their track beyond Brandon to construct upward of twenty miles additional road, and expect to have enough forwarded to the same point by the first of May to construct 300 miles of road next season.

THE engineers of the Philadelphia and Reading Railroad Company commenced on the 30th ult. the survey for a new branch road connecting Shamokin and Danville. This is one of the necessities of the recent connection of the Pine Creek road with the New York Central branch at Williamsport, and will be a short cut from the East Mahanoy coal fields. At present all the coal destined for the West must



be carried around the two sides of a triangle via East Mahanoy and the Catawissa Railroad to Danville, making in all about sixty miles. The new branch will be only fifteen miles in length.

THE project of extending the Ulster and Delaware Railway from Stamford, its present western terminus, to Cooperstown, a distance of 22 miles west, is being again agitated by the citizens of the latter village. It is claimed that by such extension a considerable saving of distance and time between that point and New York and other leading points would be effected.

THE Richmond and Danville Company have completed the Western North Carolina Railroad to Paint Rock and Pigeon River. Trains are now running to both points. This completion was made within the time as extended by Gov. Jarvis and treasurer J. M. Worth, and put an end to all talk of a forfeiture of the contract because the road was not completed by November 1, 1881.

THE New York, Lackawanna and Western Railroad has been completed in single track for a distance of 146 miles, leaving only 40 or 50 miles of track more to be laid. This completed distance is not in one continuous line, but the road has been finished with double track as far west as Waverly, to which place trains are running regularly. It is expected that the line will be extended at an early day as far as Elmira.

#### PERSONAL.

JAMES A. MILLHOLLAND manager of the Georges Creek and Cumberland Railroad, has invented an important improvement in the coal-car brake.

JOHN THOMAS has received the appointment of general superintendent of the Chicago division of the Baltimore and Ohio Railroad, with headquarters at Chicago.

DR. H. O. WALKER has received the appointment of surgeon of the Wabash, St. Louis and Pacific Railway for all points on the line between Detroit and Adrian.

B. E. NICHOLS has been appointed traveling freight agent of the Illinois branch and the Springfield division of the Illinois Central Railroad, in place of W. W. Chamberlain, resigned.

WM. E. RUTTER, of Elmira, N. Y., car tracer of the Pennsylvania Railroad, and father of James H. Rutter, third vice-president of the New York Central and Hudson River Railroad, died suddenly on Saturday of heart disease, aged 70.

THE mother of the Marquis of Bath, whom the Prince and Princess of Wales visited last month, was a Baring, and her son is credited with the remark that it would take two generations to wash the stain of commercial blood off his escutcheon.

WHEN the Central Vermont Railroad was built, J. R. Booth of Burlington worked as a common bridge hand. Now he is the largest timber limit owner in Canada, owning 2,225 square miles, or 1,423,360 acres—an area equal to more than one-fifth of the State of Vermont.

WM. J. WALKER, late of the Gilsey House,

New York, has been appointed superintendent of the Baltimore and Ohio Railroad Company's hotels. His headquarters will be at the Queen City Hotel, at Cumberland, Md. Mr. Walker succeeds Captain J. P. Dukehart, who has held the position of manager of the company's hotels for about two years.

At a meeting of the directors of the St. Louis and San Francisco Railroad in this city on the 27th ult., Jay Gould, Russell Sage, C. P. Huntington and Leland Stanford were elected members of the board. Places were made for them by the resignation of Walter L. Frost, Alden Speare and Francis B. Hayes of Boston; and Ozias Bailey of White Cloud, Kansas.

S. T. FULLER has been appointed general superintendent and chief engineer of the Northern division of the Mexican National Construction Company and the Mexican National Railway Company, as also general superintendent and chief engineer of the Texas-Mexican Railway. His duties as general superintendent and chief engineer will extend over all the lines of these companies north of San Luis Potosi, including the Matamoras division.

It will doubtless be remembered by many that Marcus Morton was elected Governor of Massachusetts by one vote. After his retirement from office, the Governor was going to Boston from a neighboring town in a train which was late. It was half past 12 o'clock, and a lady who was anxious to be in Boston inquired of the Governor what time, in his opinion, the train would reach the station. Taking out his watch, and with a twinkle in his eye, he replied, "I generally get in by one."

#### ORGANIZATION.

THE directors of the Providence, Warren and Bristol Railroad Company, elected on the 30th ult., are: T. P. I. Goddard, William R. Robeson, Henry A. Whitney, William Goddard, Francis M. Weld and Royal C. Taft. Mr. Whitney was re-elected president.

At the recent annual meeting of the Elkhart, Niles and Lake Michigan Railroad Company, the following directors were elected: F. M. Gray, Thomas L. Stevens, E. L. Badger, J. C. Larimore, of Niles; H. W. Williams, of Benton Harbor; J. Wade, W. S. Jones, Cleveland; C. W. Beck, Elkhart; C. E. Cowgill, Wabash. At a meeting of the directors F. M. Gray was elected president; E. S. Badger, vice-president; J. C. Larimore, treasurer; and George F. Edwards, secretary.

THE stockholders of the Cambria Iron Company, at their recent meeting in Philadelphia, re-elected the following board of directors: E. Y. Townsend, D. J. Morrel, C. S. Wurtz, John M. Kennedy, Geo. L. Oliver, Samuel Welsh, I. V. Williamson, David Reeves and Henry Lewis. At a subsequent meeting of the directors, E. Y. Townsend was re-elected president; Charles Wurtz, vice-president; Daniel J. Morrell, general manager; John T. Kille, treasurer, and W. S. Robinson, secretary.

At the annual meeting of the Fitchburg Railroad Company, held in Boston on the 31st ult., the following gentlemen were unanimously

elected directors, the first five being of the old board: William B. Stearns, Seth Bemis, Robert Codman, Rodney Wallace, C. U. Cotting, Franklin N. Poor, and Charles T. Crocker. Subsequently the directors organized by the choice of William B. Stearns as president; T. Whittemore, clerk; and M. D. Benson, treasurer.

THE first annual meeting of the stockholders of the New York, Chicago and St. Louis Railway Company was held at Cleveland, Ohio, on the 31st ult., at which the following directors were unanimously elected: C. R. Cummings, of Chicago, Ill.; C. S. Brice, of Lima, Ohio; Samuel Thomas, of Columbus, Ohio; Daniel P. Eells, of Cleveland, Ohio; Gov. Charles Foster, of Fostoria, Ohio; George I. Seney John T. Martin, H. R. Lyman, Walston H. Brown, William Flannery, and Alexander White. No report was made.

THE following gentlemen were elected directors of the Jersey Shore, Pine Creek and Buffalo Railroad Company, at the annual meeting of the stockholders held at Coudersport, Penn., on the 23d ult.: Walter Sherwood, John W. Bailey, Jerome B. Niles, Anson Hardt, William Howell, Jr., E. G. Schieffeline, Jefferson Harrison, William H. Vanderbilt, Cornelius Vanderbilt, Augustus Schell, William K. Vanderbilt, George J. Magee. The officers are Henry Sherwood, president; George S. Magee, vice-president; Cornelius Vanderbilt, treasurer.

At a meeting of the stockholders of the Allen Paper Car Wheel Company, held the first day of February, 1882, the following named persons were elected directors of the company, for the ensuing year: A. G. Darwin, A. P. Condit, R. J. Beach, J. C. Beach, Stephen F. Gale, J. E. Gillette, R. N. Allen, C. G. Hammond, Geo. C. Clarke. Subsequently, at a meeting of the board of directors, the following officers were elected: A. G. Darwin, president; J. E. Gillette, 1st vice-president; Geo. C. Clarke, 2nd vice-president; J. C. Beach, treasurer, C. H. Antes, secretary.

#### Discipline.

THE absence of discipline among subordinates is usually attributed to a lack of that capacity in the management, as the successful and competent chief, if possessed of the organizing and executive ability demanded by his position, is expected to display the necessary power for diffusing his system throughout all branches of the service.

Discipline, if properly administered, always commends itself to intelligent subordinates, and they soon hold that superior in high esteem who requires a strict obedience to every order, by which their own as well as the public safety is assured. They become inspired, under such control, with a true pride of office, such as is known in military circles as "*esprit de corps*."

A competent and thorough disciplinarian is never a tyrant, but exhibits a wholesome control, is easily approached, and has a willing ear for all wrongs. His power proceeds from unremitting attention to his own duties and his personal recognition of all orders, rather than from any severity of manner; though the penalty of disobedience may and should be swift and sure.

### New York Stock Exchange.

(Thursday's quotations follow money article.)  
Closing Prices for the week ending Feb. 1.

Th. 26. F. 27. Sat. 28. M. 30. Tu. 31. W. 1.

Adams Express.....	147	147			
Albany and Susq.....	132				
1st mortgage.....					
2d mortgage.....					
American Express.....	93 1/2	93	94	94	92 1/2
Atlantic & Pac. Tel.....					
Burl. C. R. & Nor.....	100 1/2	100	98	100	99 1/2
Canada Southern.....	53 1/2	54 1/2	54 1/2	53	53
1st mortgage guar.....	95 1/2	95 1/2	95	95	95
Central of N. Jersey.....	94 1/2	96	95 1/2	94 1/2	94 1/2
1st mort. 1890.....	115	115	115	115	115
7s, consol. ass.....	115	115	115	115	115
7s, convertible ass.....					
7s, Income.....					
Adjustment.....					
Central Pacific.....	88 1/2	89 1/2	88 1/2	87 1/2	88 1/2
6s, gold.....	114 1/2	114 1/2		114	114
1st M. (San Joaquin).....					
1st M. (Cal. & Or.).....					
Land grant 6s.....					
Chesapeake & Ohio.....	25 1/2	24 1/2	24 1/2	23 1/2	23 1/2
1st series B.....					
Chicago and Alton.....	134 1/2	134 1/2	133 1/2	132 1/2	133
Preferred.....					
1st mortgage.....	121				
Sinking Fund.....					
Chi., Bur. & Quincy.....	135 1/2	138	137 1/2	134 1/2	135
7s, Consol. 1903.....	126				
Chi., Mil. & St. Paul.....	107 1/2	109 1/2	108 1/2	107 1/2	109
Preferred.....	122 1/2	122 1/2	121 1/2	121 1/2	122 1/2
1st mortgage, 8s.....					
2d mort., 7 1/2-10s.....					
7s, gold.....	125				
1st M. (La. C. div.).....					
1st M. (I. & D. ext.).....	119				
1st M. (H. & D. div.).....					
1st M. (C. & M. div.).....	122 1/2	123			
Consolidated S. F.....	119	120	120	119	120
Chi. & Northwestern.....	127 1/2	130 1/2	129 1/2	130 1/2	135 1/2
Preferred.....	139 1/2	149 1/2	140 1/2	139 1/2	141 1/2
1st mortgage.....					
Sinking Fund 6s.....	111				
Consolidated 7s.....	134				
Consol. Gold b'ds.....	127	124	127	126 1/2	126 1/2
Do. reg.....	127				
Chi., R. Isl. & Pac.....	133 1/2	133 1/2	132 1/2	132 1/2	132 1/2
6s, 1917, c.....					
Clev., Col. & Ind.....	80 1/2	81 1/2		78 1/2	79 1/2
1st mortgage.....					
Clev. & Pittsburg gr.....					
7s, Consolidated.....					
4th mortgage.....					
Col., Chi. & Ind. Cent.....	19 1/2	19 1/2	19 1/2	19 1/2	19 1/2
1st mortgage.....					
2d mortgage.....					
Del. & Hud Canal.....	106 1/2	107	107	106 1/2	106 1/2
Reg. 7s, 1891.....					
Reg. 7s, 1894.....	104 1/2				
7s, 1894.....	119 1/2				
Del., Lack. & Western.....	124 1/2	125 1/2	125 1/2	124 1/2	126 1/2
2d mortgage 7s.....					
7s, Consol. 1907.....					
Erie Railway.....					
1st mortgage.....					
2d mort. 6s, ext.....	107 1/2				
3d mortgage.....					
4th mort. 6s, ext.....					
5th mortgage.....					
7s, Consol. gold.....					
Great West. 1st mort.....					
2d mortgage.....					
Hannibal & St. Jo.....	95 1/2	95 1/2	95 1/2	94 1/2	95 1/2
Preferred.....	107 1/2	109 1/2	109	108 1/2	108 1/2
8s, Convertible.....					
Houston & Tex. Cen.....	83 1/2	83 1/2	83 1/2		80 1/2
1st mortgage.....	111 1/2	110			
2d mortgage.....					
Illinois Central.....	134	135 1/2	135	133 1/2	134 1/2
Lake Shore & Mich So.....	113	112 1/2	111 1/2	109 1/2	110 1/2
Consol. 7s.....					
Consol. 7s, reg.....					
2d Consolidated.....					
Leh. & W. B. 7s, Con.....					
Long Dock bonds.....					
Louisville & Nash.....	95	96 1/2	94 1/2	93 1/2	94
7s, Consolidated.....					
Manhattan.....	53	55 1/2	54 1/2	54 1/2	53
1st pref.....	97 1/2	98	98		
Mt. Elevated.....	87 1/2				
1st mortgage.....	100 1/2	100 1/2	100 1/2	100 1/2	100 1/2
Michigan Central.....	86 1/2	87 1/2	86 1/2	85 1/2	86 1/2
7s, 1902.....					
Morris & Essex.....	122				
1st mortgage.....					
7s of 1871.....	125				
7s, Convertible.....					
7s, Consolidated.....					

N. Y. Cen. & Hud. R.	130 1/2	131 1/2	130 1/2	129 1/2	129 1/2	130 1/2
6s, N. P. 1883.....						102 1/2
6s, S. F., 1887.....						
1st mortgage.....	134 1/2			133 1/2	134	
1st mortgage, reg.....						
N. Y. Elevated.....	109 1/2			108		
1st mortgage.....	116 1/2	116 1/2		116 1/2	116 1/2	
N. Y. & Harlem.....						
Preferred.....						
1st mortgage.....	135					
1st mortgage, reg.....						
N. Y., Lake Erie & W.....	40 1/2	40 1/2	40 1/2	39	39 1/2	39 1/2
Preferred.....				81 1/2	79	79 1/2
2d Consolidated.....	99 1/2	100	99 1/2	98 1/2	98 1/2	98 1/2
New 2d 6s fund.....				95 1/2		
N. Y., N. Harv'n & Hart.....	171 1/2			171 1/2	171 1/2	
North Mo. 1st mort.....	119	119 1/2		120		
Northern Pacific.....	35 1/2	35 1/2	35 1/2	34 1/2	34	34 1/2
Preferred.....	72 1/2	74	72 1/2	71 1/2	70 1/2	72 1/2
Ohio & Mississipp.....	34 1/2	34 1/2	33 1/2	32 1/2	33	
Preferred.....				100 1/2		
2d mortgage.....						
Consolidated 7s.....				117 1/2		
Consol. S. Fund.....						
Pacific Mail S. S. Co.....	41 1/2	42 1/2	42 1/2	41 1/2	42	41 1/2
Pacific R. R. of Mo.....	110			109		
1st mortgage.....						
2d mortgage.....				111 1/2		
Panama.....				190		
Phila. & Reading.....	63 1/2	54 1/2	63 1/2	61 1/2	61 1/2	62 1/2
Pitts., Ft. W. & Chi. gtd.....						
1st mortgage.....						
2d mortgage.....						
3d mortgage.....						
Pullman Palace Car.....	139	139 1/2	140	135 1/2	135	136 1/2
Quicksilver Min'g Co.....						
Preferred.....	61 1/2			60 1/2		
St. Louis & San Fran.....	44	44 1/2	43 1/2	42	41 1/2	41 1/2
Preferred.....	61	64	63	61 1/2	58	57 1/2
1st Preferred.....	102	100 1/2	101 1/2			98 1/2
St. L., Alt'n & T. H.....	38	37		36	35	35
Preferred.....				32	41	81
1st mortgage.....						
2d mort. pref.....	110					
Income bonds.....						
St. L., Iron Mt. & S.....						
1st mortgage.....						115
2d mortgage.....	109			109	109	109
Toledo and Wabash.....						
1st mortgage.....				111		
2d mortgage.....						
7s, Consolidated.....	106				103 1/2	x
St. Louis Division.....					112 1/2	
Union Pacific.....	117 1/2	117 1/2	117 1/2	116 1/2	116 1/2	117 1/2
1st mortgage.....	115 1/2			115 1/2	116	
Land Grant 7s.....						113 1/2
Sinking Fund 8s.....	123			122		
United States Ex.....	79 1/2	79 1/2	78		77	
Wabash, St. L. & Pac.....	36 1/2	36 1/2	36 1/2	35 1/2	35 1/2	36 1/2
Preferred.....	63	63 1/2	67 1/2	66 1/2	67	67 1/2
New mort. 7s.....						
Wells-Fargo Ex.....	130 1/2					
Western Pacific b'ds.....						
Western Union Tel.....	80 1/2	82 1/2	81	79 1/2	79 1/2	80 1/2
7s, S. Feonv., 1900.....						116 1/2

### Boston Stock Exchange.

Prices for the Week Ending Feb. 1.

Th. 27. F. 28. Sat. 29. M. 30. Tu. 31. W. 1

Atch., Top. & San. Fe.....	90 1/2	90 1/2	89 1/2	87	86 1/2	87 1/2
1st mortgage.....	119					118 1/2
2d mortgage.....						
Land Grant 7s.....						
Boston & Albany.....	165	166				167 1/2
7s reg.....						
Boston and Lowell.....						103 1/2
Boston & Maine.....	145 1/2	145 1/2	145	145	145	145 1/2
Boston & Providence.....						
Bos'n, Hart. & Erie 7s.....	65 1/2	65 1/2	65 1/2	62 1/2	62 1/2	64
Burl. & Mo. R. L. G. 7s.....						
Burl. & Mo. R. in Neb.....						
6s, exempt.....	114 1/2			114		
4s.....	40					
Chi., Burl. & Quincy.....	134 1/2	135 1/2	137 1/2	134 1/2	134	135 1/2
7s.....						
Cin., Sand & Clev (\$50).....	25 1/2		26 1/2	26	25 1/2	
Concord (\$50).....						
Connecticut River.....						
Eastern.....	35	34				
New 4 1/2 Bonds.....	108 1/2	109	110	109	109	108 1/2
Fitchburg.....	133 1/2	133 1/2	133 1/2			134 1/2

N. Y. & New England.....	60 1/2	60 1/2	60	117 1/2	117	117
7s.....	117 1/2					
Northern N. H.....						
Norwich & Worcester.....						
Ogden & Lake Cham.....						
Preferred.....						
Old Colony.....	124 1/2	125	124 1/2			
Ph., Wil. & Balt. (\$50).....	64		64			
Portl'd, Saco & Ports.....						113 1/2
Pueblo & Ark Val.....						
7s.....				115	115	116
Pullman Palace Car.....	139	141 1/2		134	135 1/2	
Union Pacific.....	117 1/2	118 1/2		116 1/2	117 1/2	
6s.....						
Land Grant 7s.....						
Sinking Fund 8s.....						
Vermont & Canada.....						
Vermont & Mass.....				134	134	
Worcester & Nashua.....						
Cambridge (Horse).....						
Metropolitan (Horse).....	76 1/2					
Middlesex (Horse).....						
Cal. & Hecla Min'g Co.....	235			231		
Quincy.....	53	52	43 1/2	42		

### Philadelphia Stock Exchange.

Closing Prices for the Week Ending Jan. 31.

W. 25. Th. 26. F. 27. Sat. 28. M. 30. Tu. 31

Allegh'y Val. 7 3-10s.....						
7s, Income.....	55	56				55½
Camd'n & Am. 6s, '83						
6s, 1889.....	105	105				
Mort. 6s, 1889.....						
Camden & Atlantic.						
Preferred.....						
1st mortgage.....						
2d mortgage.....	165½					
Catawissa.....	20	20	20	13½	19½	
Preferred.....	53½	54		54½	54½	55
7s, new.....						
Del. & Bound Brook						
7s.....	126			126		
Elmira & Williams p't						
Preferred.....						
Hunt. & B. Top Mt.						
Preferred.....	14½					
2d mortgage.....				27½	26	26
Lehigh Navigation.	42½	43	42½	42½	42½	42½
6s, 1884.....	105	105			105	
Gold Loan.....	111½				110½	110½
Railroad Loan.....					116½	
Conv. Gold Loan.....						
Consol. Mort. 7s.....		116½				
Lehigh Valley.....	62	62½	62½	62½	61½	66½
1st mort. 6s, coup					121½	
1st mort. 6s, reg..	134					
2d mort. 7s.....					134	
Consol. mort.....		118	118½			
Consol.mtg.6s,reg		118½			119½	
Little Schuylkill.....	56	56		56	56	
Minehill & Sch. Hav'n			61			
North Pennsylvania		62½	62	62½		62½
1st mortgage 6s...	106					
2d mortgage 7s...			123		123	
Gen'l. mtg. 7s, coup						
Gen'l. mtg. 7s, reg						
Northern Central.					48½	
6s.....				96		96
Northern Pacific...	35	35½	35½	35½	34½	34
Preferred.....	72½	73	74	72½	71½	70½
Pennsylvania R. R.	61½	61½	61½	61½	6¾	60¾
1st mortgage.....						
Gen'l mort.....					117	
Gen'l mort reg.....						
Consol. mort. 6s.....						
Consol. mort. reg						
Pa. State 6s 2d series.						
do 3d series.....						100
do 6s, new.....				116		
do 3s.....						
Phila. & Reading...	31½	31½	32½	31½	30½	30½
1st mortgage 6s...						
7s of 1893.....						
7s, new convert.....						
Consol. mort. 7s.....				125		
Consol. mort. reg.....						
Gen'l mort. 6s.....	98½	98½	98½	99	99	98½
Philadelphia & Erie	19	19				16
1st mortgage 6s...			106½	106½		108½
2d mortgage 7s...				114		
Pittsb., Cin. & St. L. 7s	124	124				
Pitts., Titusv. & Buff.	19½	19½	19½	19½	18½	18½
7s.....		102				
Schuylkill Navi't'n.						
Preferred.....		12½	12½			12½
6s, 1872.....			107			
6s, 1882.....	87½	89			89	
United Co. of N. J.	185	185	185½	185½	186	186
Hestonville, (Horse)			18	18		17
Chestnut & Wal. (do).						
Gruen & Coates (do).						



## Baltimore Stock Exchange.

Closing Prices for the Week Ending Jan. 31.

W. 25. Th. 26. F. 27. Sat. 28. M. 30. Tu. 31.

Baltimore & Ohio...	195 1/4				
6s, 1880...					
6s, 1885...					
Central Ohio (\$50)...	50				
1st mortgage...	111				
Marietta & Cin. 1st...					
1st mortgage, 7s...	122	122	125 1/4		
2d mortgage, 7s...	104 1/4	104 1/4	105 1/4	105 1/4	
3d mortgage, 8s...	53 1/4	53 1/4	53	53	58 1/4
Northern Cen. (\$50)...	49 1/4				
2d mort., 6s 1885...	103 1/4	103 1/4			
3d mort., 6s, 1900...					
6s, 1900, gold...	114 1/4	114	114		
6s, 1904, gold...	112 1/4				
Orange & Alex. 1st...					
2d mortgage, 6s...	104				
3d mortgage, 8s...					
4th mortgage, 8s...					
O., Alex. & Manas's 7s...					
Pitts. & Connellav. 7s...					
Virginia 6s, Consol...	64 1/4	63 1/4	62 1/4	62	
Consol. coupons...	64	65	65 1/4		
10-40 bonds...	42	40 1/4	40	40	
Def'd Certificates...	15 1/4				
Western Maryland...	14 1/4				
1st M., end. by Balt...	104				
2d M., do...					
3d M., do...					
1st M., end. WashCo...					
2d M., end. WashCo...					
2d M., preferred...	106				
City Passenger R.R.	41				

## London Stock Exchange.

Closing Prices—

	Jan. 13.	Jan. 14.	Jan. 15.	Jan. 16.	Jan. 17.	Jan. 18.	Jan. 19.	Jan. 20.	Jan. 21.	Jan. 22.	Jan. 23.	Jan. 24.	Jan. 25.	Jan. 26.	Jan. 27.	Jan. 28.	Jan. 29.	Jan. 30.	Jan. 31.
Baltimore & Ohio (sterling)...	114	116	114	116															
Cairo & Vincennes com. stock	36	38	38	38															
Do. preferred 5 per cent.	90	92	90	92															
Central of N. J. \$100 share	93	98	93	98															
Do. Cons. Mortgage...	115	117	115	117															
Do. Adjustment Bonds...	104	109	104	109															
Do. Income Bonds...	104	107	104	107															
Det., G'd Haven & Mil. Equip bds	112	114	112	114															
Do. Con. M. Sp. c. till '83 aft' rep.	110	112	110	112															
Illinois Central \$100 shares	135 1/4	136 1/4	132	133															
Lehigh Valley Cons. mortgage...	115	119	115	119															
Louisville & Nashville mort 6s	105	107	105	107															
Do. Sink. Fund bds (S. & N. Ala)	102	104	103	105															
Do. capital stock \$100 shares	97	99	103	105															
N. Y. Cent. & Hud. R. mt. bds.	134	137	134	137															
Do. \$100 shares	136 1/4	137 1/4	132	134															
Do mort. bonds (stg.)	123	125	120	122															
N. Y., Lake Erie & West. \$100 shs	42 1/4	42 1/4	40	40 1/4															
Do. 6 p. c. pref. \$100 shares	87	89	84	86															
Do. 1st Con. Mort. bds (Erie)	131	133	131	133															
Do. do. Funded Coupon bds	127	129	127	129															
Do. 2d Consol Mort. bonds	101	103	100	102															
Do. do. Funded Coupon bds.	97	100	97	100															
Do. Gold Income bonds.	93	95	95	100															
N. Y., Pa. & Ohio 1st mort. bonds	47	48	45	46															
Do. Prior Lien bds (sterling)	104	108	104	108															
Pennsylvania, \$50 shares	63	64	62	63															
Do. Con. Sink Fund Mort.	116	118	118	122															
Philadelphia & Reading \$50 shs	33 1/4	33 1/4	32	33 1/4															
General Consol Mortgage...	116	118	116	118															
Do. Improvement Mortgage...	103	105	103	105															
Do. Gen. Mtg. '74, ex-def'd coup.	99	101	100	101															
Do. Scrip for the 6 def. 1/2 coup.	92	97	92	97															
Pittsb., Ft. W. & Chi. Eq. bds.	105	109	105	109															
St. L. Bridge 1st mort. gold b'd	126	128	126	128															
Do. 1st pref. stock	102	104	102	104															
Union Pa. Land Grant 1st. mtg.	115	119	115	119															

## AMERICAN RAILROAD JOURNAL.

## Financial and Commercial Review.

THURSDAY EVENING, Feb. 2, 1882.

In the morning hours stockholders generally paid 5@6 per cent for call loans. Borrowers on call on Government securities were accommodated at 2@3 per cent. Time loans on stocks were hard to get at 6 per cent. Mercantile paper was 5@6 per cent. In the afternoon the quotation for call loans was 6 per cent, but in the last hour fell to 4@5 per cent, and at the close to 3@4 per cent.

The actual rates for sterling exchange were 4.89 1/2 @ 1/2 for demand bills, 4.83 1/2 @ 4.84 1/2 for 60 day bills, 4.90 1/2 @ 4.91 1/2 for cables, and 4.81 1/2 @ 4.82 for prime commercial bills. The actual rates for continental bills are as follows: francs, 5.11 1/2 @ 5.12 1/2, and 5.17 1/2 @ 5.18 1/2; marks,

94 1/2 @ 94 1/2, and 95 1/2 @ 1/2, and guilders 40 1/2 and 40 1/2.

There had been redeemed at the Treasury Department at Washington to the 31st ult., \$19,178,900 bonds included in the 10th and \$15,112,050 included in the 106th call, leaving \$5,709,050. Interest ceased on 24th December on the 105th call, and on 30th January on the 106th call. The next call to mature is for \$20,000,000, due 12th March next.

From the message of the Governor of Rhode Island, delivered on the 31st ult., we learn that the bonded indebtedness of the State at the close of the year was \$2,118,500—a decrease during the year of \$129,011. The sinking fund amounts to \$723,122.

At the annual meeting of the stockholders of the Fitchburg Railroad Company, held in Boston on the 31st ult., the annual report of the directors was presented and accepted. The number of directors was increased from five to seven, and the old board unanimously re-elected, with the addition of Franklin N. Poor and Charles T. Crocker. On motion it was voted that the directors be authorized to issue 20-year additional bonds to the amount of \$500,000, necessary for the funding of the floating debt, and also that all issues of bonds by them already made be hereby ratified and approved. It was also voted that the acts and doings of the directors in regard to the change of the location of the railroad in Belmont, and in releasing the company's rights to certain land in Belmont with the consent of the Legislature of Massachusetts to the Mass. Central R. R. Co., under the agreement made between the two railroads December 14, 1880, is hereby ratified and approved. This vote refers to the agreement whereby the Massachusetts Central provided a new road-bed for the Fitchburg in Belmont, leasing the old road-bed for their own tracks.

The annual report of the State Treasurer of Maine shows receipts of \$1,417,526.83 and expenditures of \$1,435,460.21; balance on hand, \$142,405.26. There was paid on the public debt, \$33,000; and for interest on the same, \$336,681.

The gross earnings of the Chicago, Burlington and Quincy Railroad for the month of November, 1881, were \$1,816,133, the expenses \$912,980, and the net earnings \$903,153; for the month of November, 1880, the gross earnings were \$1,835,860, the expenses \$858,206, and the net earnings \$978,653; showing a decrease in gross earnings of \$21,726, with an increase in expenses of \$54,774, making a decrease in the net earnings of \$76,500. From January 1, to November 30, 1881, the gross earnings were \$19,270,964; the expenses \$9,703,161, and the net earnings \$9,567,803; for the corresponding period of the previous year the gross earnings were \$18,902,476, the expenses \$8,681,494, and the net earnings \$10,220,982; showing an increase in gross earnings of \$368,488, with an increase in expenses of \$1,021,667, making a decrease in the net earnings of \$653,179.

In the United States House of Representatives, at Washington, on the 30th ult., the proposition to restore to the Government unearned lands held as grants by certain railroad companies was, on motion of Mr. Townsend,

of Ohio, referred to the Committee on Judiciary by a vote of 161 to 58.

The report of the Western Maryland Railroad Company states that the gross earnings for the year ending September 30, 1881, were \$461,871.01, the expenses \$375,919.02, and the net earnings \$85,951.99. Compared with the previous year there was an increase in gross earnings of \$64,306.92, with an increase in expenses of \$66,633.84 making a decrease in the net earnings of \$2,326.92. There were moved during the year 498,000 passengers and 201,259 tons of freight, being equivalent to the movement of 12,277,592 passengers and 7,278,431 tons of freight a distance of one mile, which, compared with 1880, shows an increase of 1,571,677 passengers and 633,103 tons of freight carried a distance of one mile.

The annual report of the Commissioner of Patents for the year ending December 31, 1881, shows that the total receipt of the office during the year were \$853,665.89, and the expenditures \$605,173.28. The balance in the Treasury on account of the patent fund Jan. 1, 1882, amounted to \$1,880,119.32. The receipts, as stated above, exceed those of any previous year by nearly \$100,000, and the excess of receipts over expenditures—\$248,492.61—has been correspondingly greater. In no former year have there been so many applications for patents though the number of patents granted in 1876 exceeded that of the past year.

The gross earnings of the Delaware, Lackawanna and Western Railroad for the year ending December 31, 1881, were \$27,396,525.98; the expenses \$19,632,661.65, and the net earnings \$7,763,864.33; from which deduct interest and rentals, \$3,558,493.74, leaving as net profits the sum of \$4,205,370.59. The balance due on account of bonds paid and retired March 1, 1881, is \$1,200,000; the surplus account, \$7,585,297; the capital stock, \$26,200,000; and the bonded debt, 4,044,900. The construction account stands at \$30,873,356; materials on hand, \$1,121,850; stocks and bonds, \$6,265,520. The accounts receivable are \$3,804,507, and the accounts payable \$3,035,037, a difference of \$769,469, which added to the above, shows that the total property and assets now amount to \$39,030,197.

The Supreme Court of the United States has affirmed the decision of a lower court awarding to the Pacific Mail Steamship Company \$292,000, with interest at five per cent from the 1st of March last, in settlement of arrears of payment for mail service.

The closing quotations on Thursday were: Adams Express, 145@148; American Express, 92@93; Chicago, Burlington and Quincy, 135 1/2 @ 136; Canada Southern, 53@53 1/2; Chicago and Northwestern, 134 1/2 @ 135; do. pref., 142 1/2 @ 143 1/2; Chicago and Alton, 133 1/2 @ 134 1/2; Central of New Jersey, 94 1/2 @ 95; Central Pacific, 89 1/2 @ 89 1/2; Chicago, Milwaukee and St. Paul, 109 1/2 @ 109 1/2; do. pref., 122 1/2 @ 122 1/2; Cleveland, Columbus, Cincinnati and Indianapolis, 80@81; Columbus, Chicago and Indiana Central, 19 1/2 @ 19 1/2; Delaware and Hudson Canal, 107@107 1/2; Delaware, Lackawanna and Western, 127 1/2 @ 128; Hannibal and St. Joseph, 95 1/2 @ 95 1/2; do. pref., 108@108 1/2; Illinois Central, 135 1/2 @ 136 1/2; Lake Erie and Western, 32 1/2 @ 33; Lake Shore and Michigan Southern, 111 1/2 @ 111 1/2; Metropolitan

Elevated, 85@86; Manhattan Elevated, 53@53½; do. 1st pref., 97@98; Michigan Central, 86½@86½; New York Elevated, 107@108; New York, Lake Erie and Western, 39½@38½; do. pref., 80@80½; New York Central and Hudson River, 131@131½; Northern Pacific, 34½@34½; do. pref., 71½@72; Ohio and Mississippi, 33½@33½; Pacific Mail, 44@44½; Texas and Pacific, 47½@47½; Union Pacific, 118½@118½; United States Express, 77@78; Western Union Telegraph, 80½@80½; Wabash, St. Louis and Pacific, 36½@36½; do. pref., 67½@67½; Wells-Fargo Express, 128@129.

The following quotations of sales of Railway and other securities, for the week, are in addition to those given elsewhere in our columns:

**New York.**—Atchison, Colorado and Pacific 1st, 98; Atlantic and Pacific 1st, 97; do. inc., 37½; Boston and New York Air Line pref., 63½; Cleveland and Toledo S. F., 108; Chicago, St. Louis and New Orleans, 84; Chicago, St. Paul, Minneapolis and Omaha, 35½; do. pref., 100½; do. consol., 99½; Chesapeake and Ohio 1st pref., 33½; do. 2d pref., 25; do. Pur. Money Fund, 112; do. 1st, Series A, 102; do. cur. int., 50½; Central Iowa 35; do. 1st, 112½; Cedar Falls and Minnesota, 18½; Chicago, Milwaukee and St. Paul S. M. div., 1st, 103; do. La C. and Dav. div. 1st, 95; do. S. W. div., 107; Chicago and Northwestern S. F. 5s, 100; Cleveland, Columbus, Cincinnati and Indianapolis consol., 123½; Columbus, Chicago and Indiana Central Inc., 71; do. 1st, 125; Chicago, Burlington and Quincy 6s, 103½; Denver and Rio Grande, 71½; do. 1st, 113½; do. consol., 104½; Des Moines and Ft. Dodge, inc., 73; East Tennessee, Virginia and Georgia, 14½; do. pref., 24; do. 1st, 115; do. inc., 56½; do. 5s, 80; Erie and Pittsburg consol., 105; Evansville and Terre Haute 1st, 96; Green Bay, Winona and St. Peter, 14; Georgia R. R. and Bank, 167½; Gulf, Colorado and Santa Fe 1st, 107; Hannibal and Central Mo. 1st, 106; Hudson River 2d S. F., 110; Houston and Texas Central 1st, Western div., 108; Indianapolis, Decatur and Springfield pref. 40; do. 2d inc., 69; Indiana, Bloomington and Western, 46; International and Gt. Northern 1st, 107; Illinois and Southern Iowa 1st, 103½; Kansas Pacific 1st consol., 103; do. 6s, Denver div. ass., 108½; do. 6s, 1896, 110; Lafayette, Bloomington and Muncie 1st, 102; Long Island, 50½; Lake Erie and Western, 33; do. 1st, 106½; Louisville, New Albany and Chicago, 74; do. 1st, 101½; Louisville and Nashville Gen'l mort., 101; Minneapolis and St. Louis pref., 60; do. 1st, 115; do. Iowa Ext. 1st, 111; Marietta and Cincinnati 1st pref., 12; Missouri, Kansas and Texas, 36½; do. consol. 7s, 104½; do. 2d, 68½; do. gen'l mort. 6s, 82½; Missouri Pacific, 102½; do. 1st consol. 102½; do. 3d, 112; Memphis and Charleston, 74; Milwaukee, Lake Shore and Western, 46½; do. 1st, 100½; Manhattan Beach, 28; Mobile and Ohio, 33½; do. 1st debent., 93; do. New mort., 112½; Metropolitan Elevated 2d, 90½; New York, Ontario and Western, 25½; Norfolk and Western pref., 55; do. Gen'l mort., 102½; Nashville, Chattanooga and St. Louis, 85; do. 1st, 115; Northern Pacific 1st, 96; New Orleans Pacific 1st, 90; Oregon Railway and Nav., 130; do. 1st, 106; Ohio Central, 23½; do. 1st, 97½; do. inc., 43; Ohio Southern, 19½; do. 1st, 90; do. inc., 43; Oregon and

Transp., 68; Ohio and Mississippi Springfield div. 1st, 121½; Peoria, Decatur and Evansville, 34½; do. 1st, 102½; Pennsylvania Co. 4½s, 98; Rochester and Pittsburg, 27; Rome, Watertown and Ogdensburg, 21½; do. 1st, 91; Richmond and Allegheny, 30½; do. 1st, 92; Richmond and Danville, 22½; do. W. P., 219; do. 1st, 105½; St. Louis, Iron Mountain and Southern 1st pref. inc., 97; do. Cairo, Arkansas and Texas 1st, 110; St. Paul Minneapolis and Manitoba, 109; do. 1st, 109½; St. Louis, Kansas City and Northern, Omaha div. 1st, 113; St. Paul and Sioux City 1st, 110; Southern Pacific of California 1st, 103½; South Pacific 1st, 104; St. Louis and San Francisco 2d, Class B, 91½; do. C, 91½; South Carolina 1st, 98; Toledo Delphos and Burlington inc., 24; Texas and Pacific, 47½; do. inc. L. G., 70½; do. Rio Grande div. 1st, 85; Utah Central, 100; Winona and St. Peter 2d, 120; Wabash, St. Louis and Pacific Gen'l mort. 6s, 86½; do. Chicago div. 1s., 85½; Alabama, Class A, 82; Louisiana consol. 7s, 68½; Missouri 6s, 1888, 109; do. 6s, 1889 and 1890, 111½; do. 6s, 1886, 106½; North Carolina 6s, S. T., 3d class, 6½; do. 4s, consol. 85; Tennessee 6s, new, 73½; do. old, 73½; Am. Dist. Tel., 31; Colorado Coal and Iron, 40½; do. 6s, 88; Cam. Coal, 31½; Maryland Coal, 20; Sutro Tunnel, ¾; Homestake, 19; Little Pittsburg, 1½; Ontario, 34; Robinson, 2½; Standard, 16½.

**Philadelphia.**—American Steamship Co. 6s, 107; Central Transportation, 35½; Catawissa new pref., 54; Chesapeake and Delaware Canal 6s, 89; Morris Canal pref., 169; Nesquehoning Valley, 57½; Pennsylvania Company 4½s, 97; Philadelphia and Reading scrip, 86½; do. Inc. 97; Philadelphia, Germantown and Norristown, 106½; Philadelphia City 6s, new, 1900, 130; do. 4s, Series E, 103; Philadelphia, Wilmington and Baltimore 4s, 95½; People's Passenger R. W. 5s, 92½; Sunbury, Hazleton and Wilkesbarre 2d, 34; Steubenville and Indiana 7s, M. & N., 103; Susquehanna Canal 6s, 75; Schuylkill Nav. 6s, 1895, 65; Western Pennsylvania 6s, Pittsburg Branch, 107½. The latest quotations are: City 6s, —@118; do. free of tax, 126@130; do. 4s, new, 102@109; Pennsylvania State 6s, 3d series, 100@101; do. 5s, new loan, 115½@116½; do. 4s, new, 107@111; Philadelphia and Reading R. R., 31½@31½; do. consol. mort. 7s, reg., 125½@126½; do. mort. 6s, 117@121; do. gen'l mort. 6s, coupon, 98½@98½; do. 7s, 1893, 118@125; do. new, conv., 74@76; United New Jersey R. R. and Canal, 185½@186½; Buffalo, Pittsburg and Western, 18½@18½; Pittsburg, Titusville and Buffalo 7s, 101½@102; Camden and Amboy mort. 6s, 1889, 113½@114; Pennsylvania R. R., 61½@62; do. general mort. reg., 121@—; do. consol. mort. 6s, reg., 119½@124; Little Schuylkill R. R. 55½@56½; Morris Canal, 65@75; do. pref., 168½@169½; Schuylkill Navigation, 5½@6; do. pref., 12½@13; do. 6s, 1882, 89@90; do. 1872, 107@108; Elmira and Williamsport pref., 58@60; do. 6s, 113@—; do. 5s, 95@—; Lehigh Coal and Navigation, 42½@44; do. 6s, 1884, 105@105½; do. R. R. loan, 116½@118; do. Gold Loan, 110½@111; do. consol. 7s, 116½@116½; Northern Pacific, 34½@35; do. pref., 71½@72; North Pennsylvania, 61½@62½; do. 6s, 105@106½; do. 7s, 121@—; do. General mort. 7s, reg., 119½@124; Philadelphia and Erie, 15½@16½; do. 7s, 114@115; do. 5s, 105½@

105½; Minehill, 60½@60½; Catawissa, 19½@20½; do. pref., 54½@55; do. new pref., 53½@54½; do. 7s, 1900, 120@—; Lehigh Valley 61½@62; do. 6s, coupon, 120@122; do. reg., 121@122; do. 2d mort. 7s, 133½@134½; do. consol. mort. 119@120½; Fifth and Sixth streets (horse), 149@150; Second and Third, 110@115; Thirteenth and Fifteenth, 75@80; Spruce and Pine, 45@50; Green and Coates, —@85; Chestnut and Walnut, 90@95; Germantown, 60@70; Union, 110@115; West Philadelphia, 105@110; People's 14@15; Continental, 100@102.

**Boston.**—Atlantic and Pacific Income, 33; do. 6s, 95; Atchison Income 8s, 102; Atchison, Topeka and Santa Fe mort. 5s, 99; Boston, Clinton, Fitchburg and New Bedford, 45; do. pref., 129; Boston Water Power Co., 6½; Boston Land, 8; Burlington and Missouri River in Nebraska 6s, non-exempt, 103½; Cincinnati, Sandusky and Cleveland 7s, 104; Central of Iowa, 34; Connecticut and Passumpsic Rivers R. R., 93; Chicago, Burlington and Quincy 4s, 87½; Chicago and West Michigan, 77; do. 5s, 95; Chicago, Milwaukee and St. Paul 6s, Dubuque div., 104; Connotton Valley, 18; Detroit, Lansing and Northern pref., 117; Flint and Pere Marquette, 22½; do. pref., 93; Iowa Falls and Sioux City, 84; Kansas City, Fort Scott and Gulf 7s, 111½; Kansas City, St. Joseph and Council Bluffs 7s, 115½; Kansas City Lawrence and Southern 5s, 105½; Little Rock Fort Smith, 65; do. 7s, 111; Massachusetts Central 6s, 93; Marquette, Houghton and Ontonagon, 60; Mexican Central blocks, new, 94; Maine Central, 38; New York and New England 6s, 107; Ogdensburg and Lake Champlain 6s, 98; Port-mouth, Great Falls and Conway 4½s, 87; Rutland, 4½; do. pref., 27; do. 6s, 101; Summit Branch, 13½; Sonora R. R., 20; do. 7s, 87; do. block, No. 4, 110; do. No. 3, 150; Toledo, Delphos and Burlington, 7; do. 6s, S. E. div., 67½; do. inc., 16; Wisconsin Central, 19; Allouez Mining Co., 3; Blue Hill, 50; Brunswick Antimony, 15; Catalpa, 55c.; Douglas, 50c.; Franklin, 12½; Harshaw, 3½; Huron, 3; Indian Queen, 3; Mesnard, 75c.; National, 2½; Napa consol. Quicksilver, 6½; Osceola, 34; Pewabic, 13½; Phoenix, 2½; Silver Islet, 26½; Sullivan, 2.

### Combustion of Fuel.

By Prof. S. N. Carvalho.

#### WHAT IS THE SCIENTIFIC THEORY OF THE COMBUSTION OF COAL?

We know that carburetted hydrogen and the other compounds of carbon require given quantities of atmospheric air to affect their combustion. What is carburetted hydrogen? On analyzing this gas we find that it consists of two volumes of hydrogen and one of carbon vapor.

What is carbon?

Carbon is only charcoal in a state of purity—that is to say, it is unmixed with any foreign ingredients.

In its purity it is a simple compound, and the work of the chemist is to unmake or separate from common charcoal these foreign ingredients to produce pure carbon.



Diamond is pure crystalized carbon. Carbon is found in considerable quantities in all organized bodies, but is most abundant in the vegetable creation, and it is principally obtained from wood. Is pure carbon black? No; chemists have failed to separate it entirely from hydrogen. Sir Humphey Davy says the most perfect that has been prepared contains five per cent of hydrogen.

Combustion is a sudden chemical combination of some substances by means of heat with oxygen, attended by the evolution of greater heat. The most available of all substances for fuel is coal. The quantity of carbon in the

Best anthracite coal is .....	92.34
Hydrogen .....	3.00
Nitrogen .....	0.58
Oxygen .....	2.57
Ash .....	1.51
	100.00

You said that carbon was found most abundant in vegetable substances. Is, then, carbon vegetable oxygen?

Yes; without doubt. The rankness of vegetation which must have existed in the carboniferous era, and the uniformity of climate which appears to have prevailed almost from the pole to the equator, would seem to imply a higher temperature of the earth's crust, and an atmosphere more laden with humidity and carbonic acid than exist in our day; but whatever may have been the geological conditions affecting the origin of coal, we may regard the deposits of that mineral (its present form) as vast magazines of power stored up at periods immeasurably distant for our use.

The principle of conservation of force and the relationship now established between heat and motion, enable us to trace back the effects which we now derive from coal, to equivalent agencies exercised at the period of its formation. George Stephenson, unaided by theoretical knowledge, rightly said that coal was the embodiment of power originally derived from the sun.

The small parcel of solar radiation which is arrested by the earth, and which constitutes less than the 2000-millionth part of the total energy sent forth from the sun, must be the power which enabled the plants of the carboniferous period to wrest the carbon they required, from the oxygen with which it was combined, and eventually to deposit it as the solid material of coal.

In our day the reunion of that carbon with oxygen restores the energy expended in the former process, and thus we are enabled to utilize the power originally derived from the luminous centre of our planetary system.

The phase of the earth's existence suitable for the extensive formation of coal appears to have passed away for ever; but the quantity of that invaluable mineral which has been stored up throughout the globe for our benefit is sufficient (if used discreetly) to serve the purposes of the human race for thousands of years, and it may be considered practically inexhaustible.

Does coal or fuel enter into combination at once, on the application of heat, and that during such combustion it evolves the gaseous matter it contains?

No; This view is neither correct nor scientific, and evades an important feature on the

use of coal, namely, the order in which the gaseous and solid portions come into use as heat-giving media.

When heat is applied to bituminous coal what becomes of it? What is the effect?

When fresh coal is thrown on incandescent coals in the furnace, instead of increasing the temperature, it becomes at once an absorbent of the heat, and the source of the volatilization of the bituminous parts; in a word, of the generation of gas.

Now, as volatilization is the most cooling process of nature, by reason of the quantity of heat which is directly converted from the sensible to the latent state, so long as any of the bituminous constituents remain to be evolved from any atom or division of the coal; its carbonaceous part remains black, at a comparatively low temperature, and utterly inoperative as a heating body; in other words, carbon has to wait its turn for that heat which is essential to its own combustion.

To be Continued.

### The Coal Trade.

THE leading coal carrying companies make the following reports of their tonnage for the week ending January 21, and for the year to same date, compared with their respective amounts carried to the same time last year:

	Week.	1882.	1881.
Reading Railroad.....	101,450	1,119,168	886,528
Schuylkill Canal .....		27,655	
Lehigh Valley .....	62,202	863,307	668,774
Delaware, Lackawanna and Western .....	62,204	220,657	186,102
Shamokin .....	19,691	50,213	51,972
Central R. R. of New Jersey ..	71,333	204,032	167,184
United R. R. of New Jersey ..	26,516	89,531	81,309
Pennsylvania Coal .....	11,183	54,078	50,546
Delaware and Hudson Canal ..	49,852	180,961	180,421
Huntingdon and Broad Top Mountain .....	10,579	33,296	26,117
Penn. and New York .....	23,066	216,862	165,399
Clearfield, Pa .....	51,259	141,603	98,366

The total tonnage of anthracite coal from all the regions for the week ending January 21, as reported by the several carrying companies, amounted to 367,078 tons, against 545,924 tons in the corresponding week last year, a decrease of 178,846 tons. The total amount of anthracite mined for the year is 1,334,950 tons, against 1,211,729 tons for the same period last year, an increase of 123,227 tons. The quantity of bituminous coal sent to market for the week amounted to 100,826 tons, against 64,790 tons in corresponding week last year, an increase of 36,036 tons. The total amount of bituminous mined for the year is 215,948 tons, against 169,014 tons for the corresponding period last year, an increase of 46,934 tons. The total tonnage of all kinds of coal for the week is 467,904 tons, against 610,714 tons in corresponding week last year, a decrease of 142,810 tons, and the total tonnage for the coal year is 1,550,904 tons, against 1,380,743 tons to same date last year, an increase of 170,161 tons. The quantity of coal and coke carried over the Pennsylvania Railroad for the week ending January 21 was 218,639 tons, of which 152,890 tons were coal and 65,749 tons coke. The total tonnage for the year thus far has been 622,817 tons, of which 436,666 tons were coal and 186,151 tons coke. These figures embrace all the coal and coke carried over the road east and west. We have received no report of the Cumberland coal shipments for the week ending January 21. The Reading Railroad shipment

for last week, ending January 28, was 92,500 tons, of which 9,600 tons were sent to and 10,300 tons shipped from Port Richmond, and 15,900 tons sent to and 12,300 tons shipped from Elizabethport. Work was suspended for three days last week, which accounts for the small tonnage over the Reading Railroad.—*Phil. Ledger*, Jan. 30.

### Fire Extinguishers on Railroads.

THE recent horrible scenes connected with the wreck on the New York Central and Hudson River Railroad, when the fearful loss of life was so exhercatingly augmented by the lack of any appliances whatever for extinguishing fire, have led to some good out of all their gloom if they have directed serious attention to the needs in this direction, as they evidently have. It was a sight as shameful as it was sad to see an elegant express train at a standstill, and its five hundred passengers watching two of its drawing-room cars and their precious contents burning, while the only available means for even attempts at putting out the flames was found in the light snow on the hillside, which was rolled into balls and thrown upon the fire. It is a pitiable picture indeed, in its weakness and lack of forthought, to hold up by the side of railroad advancement in other directions. But the picture will have its influence. A demand is made that all possible appliances for relief in such emergencies shall be provided, and that the demand is being complied with in some directions is a most reassuring fact. Two hundred fire extinguishers have recently been purchased for the Boston and Albany Railroad, and other companies are busily at work arranging for the adoption of such appliances, to be carried on the exterior or interior of passenger coaches, as may seem most desirable after investigation and experiments have assisted in deciding what the best equipment is. Extinguishers are now in use on a number of roads, among them the Illinois Central Railroad. Mr. S. F. Hayward, general agent of the Fire Extinguisher Manufacturing Co., 407 Broadway, informs us that some time ago Mr. W. K. Ackerman, president of that road, said: "This company has in use four hundred of your small Extinguishers, and five of the large tanks on wheels, which we hold at our principal shops. We have found them of incalculable benefit to us, and their use has resulted in the saving of an immense amount of our property from fire. In fact, very shortly after bringing them into general use on the road, we ceased insuring altogether. We keep up a full supply and have a specially appointed officer to superintend them and see that they are properly filled for use." An account kept at the auditor's office of that road, charging current premiums and crediting losses from time to time, showed the savings on insurance in six years to be over \$200,000.

THE census returns give the annual production of iron ore in Lehigh county as 321,322 tons. This is the largest product of any county in Pennsylvania. Next comes Lebanon with 286,000 tons, Berks with 253,000 tons, Blair with 155,000 tons and Northampton with 105,000 tons. The iron ore in Lehigh county is

produced from about 200 mines, while that in Lebanon comes almost entirely from a single one—the great ore bank at Cornwall. The entire production in Pennsylvania in 1880 is given as 2,186,000 tons, and that of the United States as 7,970,000 tons. The average royalty per ton was 42 cents and the average market price \$2.90.

### INCORPORATION.

THE Canton Street Railroad Company, of Canton, Ohio, has been incorporated with a capital of \$30,000.

THE Palmer Wire Company of Palmer, has been chartered with a capital of \$50,000 for the manufacture of iron, Bessemer, and cast steel wire and iron goods of any name, nature or description.

ARTICLES of incorporation have been filed in the office of the Secretary of State of Oregon, of the Stayton and Mehama Canal, Logging and Transportation Company; capital, \$10,000. The incorporators are S. A. Jones, John A. Shaw and Wm. E. Price. Principal office, Stayton.

A CHARTER was issued at the State department at Harrisburg, Pa., on the 26th ult., to the Tionesta and Allegheny Valley River Railroad Company, with a capital of \$580,000. The new road will extend from South Oil City, Venango county, to Sheffield, Warren county, a distance of 58 miles. Thomas H. Wilson, of Venango, is president.

### CONSOLIDATION.

THE lines of the Canadian Pacific Railway have been consolidated in such a way that all west of Lake Superior to the Pacific coast will be known as the Western division, and all the Atlantic line, as the Eastern division. W. C. Van Horne, late of the Chicago, Milwaukee and St. Paul Railway, is general manager of the entire trans-continental road, and has two superintendents under him to operate the respective divisions. The subordinate positions are all being filled on a permanent basis. The official list is principally American and gives umbrage to Canadians.

THE Virginia Legislature has passed a bill authorizing the Peninsular Railroad Company to consolidate with or receive a conveyance of "the railroad property and rights of the Worcester and Somerset Railroad Company," and thereafter "to hold, own, extend, complete, manage and operate said railroad." Section 2 authorizes an increase of the capital stock \$1,500,000. Section 3 empowers the Peninsular Railroad Company to change its name to the "New York, Philadelphia and Norfolk Railroad Company." William Painter has been elected president, and J. L. Bates treasurer of the company.

THE largest steel sailing vessel ever constructed was launched a few days ago at Belfort, England. She is named the Garfield, after the late president. She is 2,220 tons register, is 292 feet in length, 24 feet 9 inches depth and 41 feet breadth. She has been built for the White Star Line, and is intended for the Australian and Californian trades.

### Cincinnati Iron Market.

OFFICE OF E. L. HARPER & Co.

Cincinnati, Jan. 31, 1882.

WE have to report a continued good demand fully up to the supply. All lots of standard quality offered find ready sale at current rates; all grades are in light supply. Forge Irons especially so. The mills here are running to their fullest capacity and report large inquiries for future deliveries, but are not anxious to book many such orders at present prices. The market closes strong at the quotations given below.

We quote as follows:

FOUNDRY.			
	No.		Mos.
Hanging Rock Charcoal.....	1 29 50@30 75	4	
Strong Neutral Coke.....	1 27 00@28 00	4	
American Scotch.....	1 26 50@27 50	4	
GREY FORGE.			
Neutral Coke.....	25 50@26 50	4	
Cold Short.....	24 00@25 00	4	
CAR WHEEL AND MALLEABLE.			
Hanging Rock Cold Blast.....	36 00@38 00	4	
" Warm Blast.....	30 00@32 00	4	
Lake Superior 1 and 2.....	32 00@33 00	4	
Lake Superior 3 & 6.....	34 00@36 00	4	
Southern Car Wheel.....	36 00@40 00	4	

### Northern Central Railway.

THE Northern Central Railway Company furnishes the following comparative statement of its gross earnings and operating expenses for the month of December:—

	1881.	1880.
Gross earnings.....	\$476,823 26	\$494,310 48
Operating expenses.....	321,633 66	270,404 36
Net earnings.....	\$154,989 60	\$223,906 12

For the twelve months ended December 31, the gross earnings, operating expenses, and net earnings were:—

	1881.	1880.
Gross earnings.....	\$5,443,700 00	\$5,050,387 29
Operating expenses.....	3,787,445 91	3,255,268 45
Net earnings.....	\$1,656,254 09	\$1,795,118 84

### Philadelphia and Erie Railroad.

THE Philadelphia and Erie Railroad Company makes the following exhibit of business for the month of December, 1881:

Gross earnings.....	\$282,772 41
Gross expenses.....	200,940 66
Net earnings.....	\$81,831 75
Net earnings, 1880.....	113,408 10
Decrease.....	\$31,576 35
Net earnings year 1881.....	\$1,024,248 75
Net earnings year 1880.....	1,369,379 35
Decrease.....	\$345,130 60

JAMES H. TAYLOR, of St Catharines, has been appointed assistant superintendent of the Kingston and Pembroke Railway.

A NEW iron steamship, 286 feet long, 40½ feet beam, 25 feet depth of hold, and 1,900 tons burden, was launched at Roach's yard at Chester, Pa., on the 28th ult. for the Old Dominion line.

LONDON contains fourteen strictly terminal railway stations, from which no fewer than 2,202 trains depart daily, and nearly 1,600 of these leave between hours of 10 A. M. and 10 P. M. The largest number of departures from a single terminus is 320, after which come two stations with 312 and 295, respectively. These figures are exclusive of the immense system supplying the city with local transit.

### Lime-Kiln Club Deliberation.

"DOAN" seek to make angels of yourselves," quietly began Brother Gardner, as the meeting opened. "In de fust place dis am no sort o' kentry fur angels, an' in de next place you would be mighty lonesome. De man or woman who becomes so sweet an' soft an' good dat dey expect eberv minit to rise up an' fly, doan' take as much comfort as folks who feel dat it will be a clus shave to git inter heaven. A little wickedness pickles a man an' makes him keep all de better. When I trade mules wid a man I prefer that he should suspect me wid an intension to make an eben \$25 by de operashun. When I deal wid a butcher I like to feel dat he will work in fo' ounces of bone fur eberv eight ounces of meat if I doan' watch him. I like to have de bootmaker tell me dat American cow-skin am French calf, an' I am pleased when de sto' clerk warrants fo' cent caliker to wash like sheet-iron. De man who am not a leetle wicked has no chance to feel sorry; no use for prayer; no need of churches. He cannot say to a fellow-man: 'I wronged you—I'm sorry—shake.'"

"De man who neber sins makes a poor nex' doah neighbor. De woman who keeps feelin' of her shoulders to see if wings have started makes a poor mother an' wuss house-wife. If you have neber injured a man an' gone to him an' axed his pardon an' made up, you doan' know what real happiness am. If your conscience has neber driben you to prayer you can't feel de goodness of de Lawd. My advice to you am to be a leetle wicked—not 'nuf to make men fear or hate you, but just 'nuff to keep you convinced dat you must help to support churches un' pay clus attenshun to what de preachers say, or you'll be left behin' when de purcushun starts."

### A Big Head of Steam.

TOPNOODY made up his mind that he was not going to be bossed any longer by his wife, so when he went home at noon he called out imperiously, "Mrs. Topnoody! Mrs. Topnoody!" Mrs. T. came out of the kitchen with a drop of sweat on the end of her nose, a dish-rag tied round her head, and a rolling-pin in her hand. "Well, sir," she said, "what'll you have?" Topnoody staggered, but braced up. "Mrs. Topnoody, I want you to understand, madame,"—and tapped his breast, dramatically—"I am the engineer of this establishment." "Oh, you are, are you? Well, Topnoody, I want you to understand that I"—and she looked dangerous—"I am the boiler that will blow up and sling the engineer over into the next county. Do you here the steam escaping, Topnoody?" Topnoody heard it, and he meekly inquired if there was any assistance he could render in the house-work.

WE began to make steel rails in America only fourteen years ago, turning out 2,000 tons that year. They then cost \$166 a ton. Three years ago they were down to \$42 a ton, and are now up to \$60. We made 900,000 tons last year. They cannot be made here, it is said, under \$40 a ton, while the English have made and sold them for \$20 a ton. In England the materials of steel rails are found close together, while here they have to be transported a long distance. English labor is one-third less than here, and English skilled labor one-half less.



**THE LAKE SHORE AND MICHIGAN SOUTH-  
ERN RAILWAY COMPANY,**  
TREASURER'S OFFICE, GRAND CENTRAL DEPOT,  
NEW YORK, December 23d, 1881.

The Board of Directors of this company have this day declared a QUARTERLY DIVIDEND of TWO per cent upon its capital stock payable on WEDNESDAY, the first day of February next at this office.

The transfer books will be closed at 3 o'clock P. M. on Saturday, the 31st instant, and will be re-opened on the morning of Saturday, the fourth day of February next.

E. D. WORCESTER, Treasurer.

**THE THIRTY-NINTH SEMI-ANNUAL CASH DIVI-**  
dend of the ILLINOIS CENTRAL RAILROAD  
COMPANY, being three and a half (3½) per cent on its  
capital stock, will be paid by the undersigned March 1,  
1882, to shareholders as registered at the close of busi-  
ness on the 11th of February, after which and until the  
4th day of March the transfer-books will be closed.

L. V. F. RANDOLPH, Treasurer.

## FOR SALE.

Ten new Locomotives, Standard Gauge, June  
and July delivery.

New 3ft. Gauge Locomotives, summer delivery.

One Second-hand Tank Locomotive 3ft. Gauge,  
rebuilt good as new, January delivery.

Second-hand Standard Gauge Locomotive and  
Passenger Cars.

Thirty new Box Cars Standard Gauge, immedi-  
ate delivery.

New Flat and Coal Cars, January delivery.

New Passenger and Combination Coaches 3ft.  
Gauge, early delivery.

New Car Wheels and Castings.

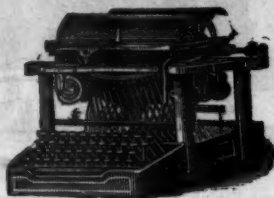
Iron and Steel Rails.

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A WRITING-MACHINE which combin-  
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[Mention this paper.]

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## HOME

## INSURANCE COMPANY OF NEW YORK,

OFFICE: NO. 119 BROADWAY.

### FIFTY-SEVENTH SEMI-ANNUAL STATEMENT,

Showing Condition of the Company on the 1st day of  
**JANUARY, 1882.**

CASH CAPITAL.....\$3,000,000 00  
Reserve for Unpaid Premiums..... 1,943,733 00  
Reserve for Unpaid Losses..... 245,595 36  
Net Surplus..... 1,806,180 90

CASH ASSETS.....\$6,995,509 26

### Summary of Assets

Held in the United States available for the PAYMENT  
of LOSSES by FIRE, and for the protection of Policy  
Holders of FIRE INSURANCE.

Cash in Banks.....	\$ 130,172 31
Bonds and Mortgages, being first lien on	
Real Estate (worth \$3,600,750).....	1,555,858 00
United States Stocks (market value).....	4,079,500 00
Bank and Railroad Stocks and Bonds (mar-	
ket value).....	664,625 00
State and Municipal Bonds (market value).....	121,750 00
Loans on Stocks, payable on demand (mar-	
ket value of Collaterals, \$341,507.50.....	229,750 00
Interest due on 1st January, 1882.....	85,819 19
Premiums uncollected and in hands of	
Agents.....	80,635 08
Real Estate.....	47,399 68
Total.....	\$6,995,509 26

J. H. WASHBURN, Secretary.

T. B. GREENE,  
W. H. BIGELOW, } Ass't Sec's.

CHAS. J. MARTIN, President.

A. F. WILMARTH, Vice-Pres't.

D. A. HEALD, 2d Vice-Pres't.

## John H. Davis & Co.,

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**JNO. N. ABBOTT,** Gen. Passenger Agent.

Railroad



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General Offices, Bridgeport, Ct. January 2, 1893.



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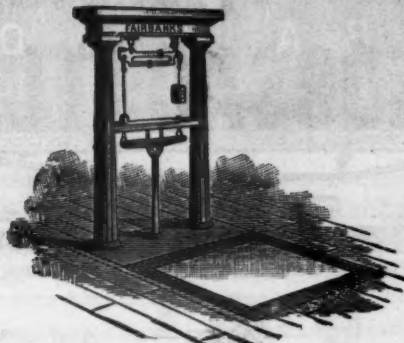


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P. N. BRENNAN, Treasurer.

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